FOSTERING MAWIKINUTIMATIMK IN RESEARCH AND CLASSROOM PRACTICE

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While engaging aboriginal elders from eastern Canada in ethnomathical conversations, we discovered challenges trying to develop a sense of mawikinutimatimk – learning together – which was our guiding principle. We reflect upon these initial challenges and how they correspond with similar issues in creating a community of learners in mathematics classrooms, especially as it pertains to aboriginal students.

The National Council of Teachers of Mathematics (NCTM) asserts that “the need to understand and be able to use mathematics in everyday life and in the workplace has never been greater and will continue to increase” (2000, p. 4). Today’s changing world demands that students have the opportunity to “learn significant mathematics with depth and understanding” (NCTM, 2000, p.5). Mathematics learning is especially important for children in Canada’s Aboriginal communities. Aboriginal leaders look to the younger generations to acquire the knowledge and skills to address community challenges such as developing sustainable economies as they move towards greater self-determination. However, currently, too few Aboriginal students are choosing to pursue studies in essential skill areas such as mathematics and science. Aboriginal people in North America have the lowest participation rates of all cultural groups in advanced levels of mathematics (Trumbull, Nelson-Barber, & Mitchell, 2002).

Methodology

Our research initiative emerged both from our desire to address the Mi’kmaw people’s call for improvements to mathematics education within their schools and from the increased national concern about the disengagement of Aboriginal students from mathematics and science. The initial goal of our research was to bring together community elders, adults and youth in dialogue about the role of mathematical processes within Aboriginal culture. The groups discuss both historical and current cultural practices that involve an informal knowledge of mathematics. Participants also consider ways to engage more Aboriginal youth in the study of mathematics. The key questions are: What mathematics is already present in Aboriginal culture? and How can this Indigenous knowledge be incorporated into the learning and teaching of mathematics to meet the needs of Aboriginal students better?

The Mi’kmaw Ethics Committee guidelines declare that Mi’kmaq people must be treated as equals when participating in research, and that knowledge must be collectively discovered. Thus research needs to be done collaboratively with participants, respecting the knowledge, values and traditions of the communities. In a casual dialogue, Lisa asked an elder for a word that describes this kind of interaction – the act of people coming together to talk about an issue or solve a problem. The word he suggested, mawikinutimatimk, literally means “coming together to learn together”. This spirit informs our methodology: all members of the group have something to share and something to learn. Our research comprises conversations, which reflect the long-standing Mi’kmaq tradition of coming together to share stories and ideas, and to deal with concerns (c.f. Joe & Choyce, 1997).

Findings

Early in our initial discussions with elders, we discovered the challenge of fostering *mawikinutimatimk*. The elders frequently asked if what they were saying was what we wanted. “Is this what you want? Are we telling you stuff you wanted to know?” Such questions demonstrate an unequal conversation, in which one group’s questions and understanding are felt to be privileged over another’s. The elders came with an understanding of what mathematics is and were unclear how that related to their everyday lives. One member of the group later said he was shocked to see everyday activities as “math” because to him they were “just problem solving in a way.” Ironically, our attempts to value Indigenous mathematics knowledge seemed to be challenging these Indigenous people’s sense of what mathematics is.

As we faced the challenges of *mawikinutimatimk* in research, we realized that similar challenges exist in mathematics classrooms. We wondered what prevents mathematics classes from becoming communities of learners – communities marked by collective discovery and in which each participant’s contributions are valued and everyone, including the teacher, can learn something new. How many students harbour the same questions for their teachers that these elders asked of us: “What do you want? What do you really want? What are you going to do with the information I give to you?” Such questions suggest a sense of inequality amongst participants (even if the teacher truly wants a sense of equality), a barrier to a classroom culture that would reflect both *mawikinutimatimk* and the NCTM’s communication principle: “Conversations in which mathematical ideas are explored from multiple perspectives help the participants sharpen their thinking and make connections” (p.60). All students must feel that their ideas and beliefs are valued within such a classroom culture. This may be especially important amongst Aboriginal children because when they do not see their cultural values reflected in the mathematics they are learning, they are not inclined to think that their ideas belong (Aikenhead, 2002; Trumbull, Nelson-Barber, & Mitchell, 2002).

Unfortunately, attempts to include cultural contexts (e.g. exploring patterns in baskets, rugs, and beadwork) often position “Western” mathematics as acting on indigenous cultural artefacts. Such trivializations insufficiently address the colonization embedded in the life experiences of Aboriginal students. A substantive, decolonized approach needs to address Indigenous *world views* in addition to artefacts: “Aboriginal children are advantaged by their own cultural identity and language, not disadvantaged in some deficit sense”(Aikenhead, 2002, p.3).

It is important for mathematics educators at all levels to be conscious of the effects of colonization on Aboriginal learners and to seek ways to include indigenous knowledge in a substantive way. Our conversations with elders have shown that mathematical knowledge was and still is embedded in the daily activities of Aboriginal people. This knowledge needs to be valued if we are to have *mawikinutimatimk* in mathematics classrooms.

In our presentation, we will describe the elders’ responses to our reflections on our conversations.

References

